

**IFWO** 

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/828,985A

DATE: 08/30/2004 TIME: 14:44:14

Input Set : A:\RS0210Y.txt

Output Set: N:\CRF4\08302004\J828985A.raw

```
3 <110> APPLICANT: Armour, Christopher D
                      Castle, John C
                      Garrett-Engele, Philip W
  5
                      Kan, Zhengyan
  6
  7
                      Loerch, Patrick M
                      Tsinoremas, Nicholas F
  8
10 <120> TITLE OF INVENTION: Novel Isoforms of Centromere Protein E (CENPE)
13 <130> FILE REFERENCE: RS0210Y
15 <140> CURRENT APPLICATION NUMBER: US 10/828,985A
16 <141> CURRENT FILING DATE: 2004-04-21
18 <150> PRIOR APPLICATION NUMBER: US 60/464,905
19 <151> PRIOR FILING DATE: 2003-04-23
                                                                                                                                                 The Control of the Co
21 <150> PRIOR APPLICATION NUMBER: US 60/510,701
22 <151> PRIOR FILING DATE: 2003-10-10
                                                                                                                                                           ENTERE
24 <160> NUMBER OF SEQ ID NOS: 25
26 <170> SOFTWARE: PatentIn version 3.2
28 <210> SEQ ID NO: 1
29 <211> LENGTH: 40
                                                                                                                                                   - me and addition the property of the Contraction
30 <212> TYPE: DNA
31 <213> ORGANISM: Homo sapiens
33 <400> SEQUENCE: 1
                                                                                                                                                                                         40
34 aagatgaatt acagaaaaag atccaagaac ttcagaaaaa
37 <210> SEQ ID NO: 2
38 <211> LENGTH: 40
39 <212> TYPE: DNA
40 <213> ORGANISM: Homo sapiens
42 <400> SEQUENCE: 2
                                                                                                                                                                                         40
43 taagggaaat gatagctaga gaccgacaga accaccaagt
46 <210> SEQ ID NO: 3
47 <211> LENGTH: 40
48 <212> TYPE: DNA
49 <213> ORGANISM: Homo sapiens
51 <400> SEQUENCE: 3
52 aagatgaatt acagaaaaag gaccgacaga accaccaagt
                                                                                                                                                                                         40
55 <210> SEQ ID NO: 4
57 <211> LENGTH: 40
58 <212> TYPE: DNA
59 <213> ORGANISM: Homo sapiens
61 <400> SEQUENCE: 4
62 aaactaaaaa agatcaagag aatgaactca gttcaaaagt
                                                                                                                                                                                         40
65 <210> SEQ ID NO: 5
66 <211> LENGTH: 40
```

67 <212> TYPE: DNA

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/828,985A

DATE: 08/30/2004 TIME: 14:44:14

Input Set : A:\RS0210Y.txt

68 <	213> ORGANI	ISM: Homo sa	apiens								
	400> SEQUE										
71 a	71 aaactaaaaa agatcaagag gaaagcattg aagacccaaa										
74 <	210> SEQ II	O NO: 6									
	211> LENGTH					· .					
7,6 <	212> TYPE:	DNA				•					
77 <	213 > ORGAN	ISM: Homo sa	apiens								
79 <	400> SEQUEN	NCE: 6									
80 á	atggcggagg a	aaggagccgt g	ggccgtctgc	gtgcgagtgc	ggccgctgaa	cagcagagaa	60				
82 9	gaatcacttg g	gagaaactgc (	ccaagtttac	tggaaaactg	acaataatgt -	catttatcaa	120				
84 9	gttgatggaa g	gtaaatcctt (	caattttgat	cgtgtctttc	atggtaatga	aactaccaaa	180				
86 a	atgtgtatg a	aagaaatagc a	agcaccaatc	atcgattctg	ccatacaagg	ctacaatggt	240				
88 á	actatatttg o	cctatggaca 🤉	gactgcttca	ggaaaaacat	ataccatgat ·	gggttcagaa -	300				
90 9	gatcatttgg g	gagttatacc (	cagggcaatt	catgacattt	tccaaaaaat	taagaagttt	360				
92 (	ctgataggg a	aatttctctt a	acgtgtatct	tacatggaaa	tatacaatga .	aaccattaca	420				
94 9	gatttactct g	gtggcactca a	aaaaatgaaa	cctttaatta	ttcgagaaga	tgtcaatagg	480				
96 a	aatgtgtatg t	tgctgatct (	cacagaagaa	gttgtatata	catcagaaat ·	ggctttgaaa	540				
98 t	ggattacaa a	agggagaaaa 🤉	gagcaggcat	tatggagaaa	caaaaatgaa	tcaaagaagc	600				
					gagagaaggg		660				
					, ttgatcttgc		720				
					, aaggetgtaa		780				
106	agcttattta	ttttgggaca	agtgatcaag	aaacttagtg	atggacaagt	tggtggtttc	840				
108	ataaattatc	gagatagcaa	gttaacacga	attctccaga	attccttggg	aggaaatgca	900				
					atgaaacact		960				
					atgttaatga		1020				
					, atcttaaaaa		1080				
					, accaattggc		1140				
					ttgaaaactt		1200				
		-			aggctaaaag		1260				
122	gttacttggt	gccttggcaa	aattaacaaa	atgaagaact	caaactatgc	agatcaattt	1320				
124	aatataccaa	caaatataac	aacaaaaaca	. cataagcttt	ctataaattt	attacgagaa	1380				
					acactcttga		1440				
				_	, agaatataga		1500				
					atgaacaact		1560				
					tggatgaatt		1620				
					atgaaatttc		1680				
					agaatgaact		1740				
					: tacaggaata		1800				
					tggaaagcat		1860				
					cccttgatgc		1920				
					aaatgaaaga		1980				
					gccaattgga		2040				
					ttaatgagat		2100				
						attggaagga					
			-	_	aagaaaatga		2220				
					ctgaagtaga		2280				
					catcagaaaa		2340				
					tacttgaaga		2400				
					gcactgatca		2460				
					J = = 5 J + 0 W		_				

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/828,985A

DATE: 08/30/2004 TIME: 14:44:14

Input Set : A:\RS0210Y.txt

162	aatttcaaaa	cccttcatat	ggactttgag	caaaagtata	agatggtcct	tgaggagaat	2520
164	gagagaatga	atcaggaaat	agttaatctc	tctaaagaag	cccaaaaatt	tgattcgagt	2580
166	ttgggtgctt	tgaagaccga	gctttcttac	aagacccaag	aacttcagga	gaaaacacgt	2640
168	gaggttcaag	aaagactaaa	tgagatggaa	cagctgaagg	aacaattaga	aaatagagat	2700
170	tctccgctgc	aaactgtaga	aagggagaaa	acactgatta	ctgagaaact	gcagcaaact	2760
172	ttagaagaag	taaaaacttt	aactcaagaa	aaagatgatc	taaaacaact	ccaagaaagc	2820
174	ttgcaaattg	agagggacca	actcaaaagt	gatattcacg	atactgttaa	catgaatata	2880
176	gatactcaag	aacaattacg	aaatgctctt	gagtctctga	aacaacatca	agaaacaatt	2940
178	aatacactaa	aatcgaaaat	ttctgaggaa	gtttccagga	atttgcatat	ggaggaaaat	3000
180	acaggagaaa	ctaaagatga	atttcagcaa	aagatggttg	gcatagataa	aaaacaggat	3060
182	ttggaagcta	aaaataccca	aacactaact	gcagatgtta	aggataatga	gataattgag	3120
184	caacaaagga	agatattttc	tttaatacag	gagaaaaatg	aactccaaca	aatgttagag	3180
186	agtgttatag	cagaaaagga	acaattgaag	actgacctaa	aggaaaatat	tgaaatgacc	3240
188	attgaaaacc	aggaagaatt	aagacttctt	ggggatgaac	ttaaaaagca	acaagagata	3300
190	gttgcacaag	aaaagaacca	tgccataaag	aaagaaggag	agctttctag	gacctgtgac	3360
192	agactggcag	aagttgaaga	aaaactaaag	gaaaagagcc	agcaactcca	agaaaaacag	3420
194	caacaacttc	ttaatgtaca	agaagagatg	agtgagatgc	agaaaaagat	taatgaaata	3480
196	gagaatttaa	agaatgaatt	aaagaacaaa	gaattgacat	tggaacatat	ggaaacagag	3540
198	aggettgagt	tggctcagaa	acttaatgaa	aattatgagg	aagtgaaatc	tataaccaaa	3600
200	gaaagaaaag	ttctaaagga	attacagaag	tcatttgaaa	cagagagaga	ccaccttaga	3660
202	ggatatataa	gagaaattga	agctacaggc	ctacaaacca	aagaagaact	aaaaattgct	3720
204	catattcacc	taaaagaaca	ccaagaaact	attgatgaac	taagaagaag	cgtatctgag	3780
206	aagacagctc	aaataataaa	tactcaggac	ttagaaaaat	cccataccaa	attacaagaa	3840
					atgtgaaaaa		3900
210	actcaggaaa	caatgaatga	actggagtta	ttaacagaac	agtccacaac	caaggactca	3960
212	acaacactgg	caagaataga	aatggaaagg	ctcaggttga	atgaaaaatt	tcaagaaagt	4020
214	caggaagaga	taaaatctct	aaccaaggaa	agagacaacc	ttaaaacgat	aaaagaagcc	4080
216	cttgaagtta	aacatgacca	gctgaaagaa	catattagag	aaactttggc	taaaatccag	4140
			_		aaaaagacaa	-	4200
					cagcactact		4260
					atgatgaaat		4320
					ttcaatctga		4380
					aaactgaaga		4440
					atgagttaag		4500
					tagaagcaat		4560
	_	-			aacttaatat		4620
					aggagcatcg		4680
				_	tgaccaacag		4740
					aaatgaaaag		4800
					aagaaattgt		4860
					cagctgtcaa		4920
					agacccagaa		4980
					tacatgaaaa		5040
		_			tggaggagac		5100
			_	_	ctagagacct		5160
					aagaaactat		5220
					tgcaaaagga		5280
					aggaactaag		5340
258	atgcatctga	aagagcagca	ggaaactatt	gacaaactca	gaggaattgt	ttctgagaag	5400

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/828,985A

DATE: 08/30/2004 TIME: 14:44:14

5460

Input Set : A:\RS0210Y.txt

```
260 acagataaac tatcaaatat gcaaaaagat ttagaaaatt caaatgctaa attacaagaa
                                                                         5520
262 aagattcaag aacttaaggc aaatgaacat caacttatta cgttaaaaaa agatgtcaat
                                                                         5580
264 gagacacaga aaaaagtgtc tgaaatggag caactaaaga aacaaataaa agaccaaagc
                                                                         5640
266 ttaactctga gtaaattaga aatagagaat ttaaatttgg ctcaagaact tcatgaaaac
                                                                         5700
268 cttqaaqaaa tgaaatctgt aatgaaagaa agagataatc taagaagagt agaggagaca
                                                                         5760
270 ctcaaactqq agagagacca actcaaggaa agcctgcaag aaaccaaagc tagagatctg
                                                                         5820
272 gaaatacaac aggaactaaa aactgctcgt atgctatcaa aagaacacaa agaaactgtt
274 gataaactta gagaaaaaat ttcagaaaag acaattcaaa tttcagacat tcaaaaggat
                                                                         5880
                                                                         5940
276 ttaqataaat caaaagatga attacagaaa aaggaccgac agaaccacca agtaaaacct
                                                                         6000
278 qaaaaaaqqt tactaagtga tggacaacag caccttatgg aaagcctgag agaaaagtgc
                                                                         6060
280 tetaqaataa aagagetttt gaagagatae teagagatgg atgateatta tgagtgettg
282 aataqattqt ctcttgactt ggagaaggaa attgaattcc acagaatcat gaagaaactg
                                                                         6120
                                                                         6180
284 aaqtatgtgt taagctatgt tacaaaaata aaagaagaac aacatgaatg catcaataaa
286 tttgaaatgg attttattga tgaagtggaa aagcaaaagg aattgctaat taaaatacag
                                                                         6240
288 caccttcaac aagattgtga tgtaccatcc agagaattaa gggatctcaa attgaaccag
                                                                         6300
290 aatatggatc tacatattga ggaaattete aaagatttet cagaaagtga gtteeetage
                                                                         6360
                                                                         6420
292 ataaagactg aatttcaaca agtactaagt aataggaaag aaatgacaca gtttttggaa
                                                                         6480
294 gagtggttaa atactcgttt tgatatagaa aagcttaaaa atggcatcca gaaagaaaat
296 gataggattt gtcaagtgaa taacttcttt aataacagaa taattgccat aatgaatgaa
                                                                         6540
298 tcaacaqaqt ttqaqqaaaq aaqtqctacc atatccaaag agtgggaaca ggacctgaaa
                                                                         6600
300 tcactgaaag agaaaaatga aaaactattt aaaaactacc aaacattgaa gactteettg
                                                                         6660
302 gcatctggtg cccaggttaa tcctaccaca caagacaata agaatcctca tgttacatca
                                                                         6720
304 agagetacae agttaaceae agagaaaatt egagagetgg aaaatteaet geatgaaget
                                                                         6780
                                                                         6840
306 aaaqaaaqtq ctatgcataa ggaaagcaag attataaaga tgcagaaaga acttgaggtg
308 actaatgaca taatagcaaa acttcaagcc aaagttcatg aatcaaataa atgccttgaa
                                                                         6900
310 aaaacaaaag agacaattca agtacttcag gacaaagttg ctttaggagc taagccatat
                                                                         6960
                                                                         7020
312 aaagaagaaa ttgaagatct caaaatgaag cttgtgaaaa tagacctaga gaaaatgaaa
                                                                         7080
314 aatgccaaag aatttgaaaa ggaaatcagt gctacaaaag ccactgtaga atatcaaaag
316 gaagttataa ggctattgag agaaaatete agaagaagte aacaggeeca agataeetea
                                                                         7140
318 gtgatatcag aacatactga tcctcagcct tcaaataaac ccttaacttg tggaggtggc
                                                                         7200
                                                                         7260
320 ageggeattg tacaaaacac aaaagetett attttgaaaa gtgaacatat aaggetagaa
                                                                         7320
322 aaagaaattt ctaagttaaa gcagcaaaat gaacagctaa taaaacaaaa gaatgaattg
324 ttaaqcaata atcaqcatct ttccaatgag gtcaaaactt ggaaggaaag aacccttaaa
                                                                         7380
                                                                         7440
326 agagaggete acaaacaagt aacttgtgag aatteteeaa agteteetaa agtgaetgga
                                                                         7500
328 acagetteta aaaagaaaca aattacaeee teteaatgea aggaacggaa tttacaagat
330 cctgtgccaa aggaatcacc aaaatcttgt ttttttgata gccgatcaaa gtctttacca
                                                                         7560
                                                                         7620
332 teaceteate caqtteqeta tittqataac teaaqtitaq qeetitgice agaggigeaa
334 aatgcaggag cagagagtgt ggattctcag ccaggtcctt ggcacgcctc ctcaggcaag
                                                                         7680
336 gatgtgcctg agtgcaaaac tcag -
                                                                         7704
339 <210> SEQ ID NO: 7
340 <211> LENGTH: 2568
341 <212> TYPE: PRT
342 <213> ORGANISM: Homo sapiens
344 <400> SEQUENCE: 7
346 Met Ala Glu Glu Gly Ala Val Ala Val Cys Val Arg Val Arg Pro Leu
                                         10
347 1
350 Asn Ser Arg Glu Glu Ser Leu Gly Glu Thr Ala Gln Val Tyr Trp Lys
351
354 Thr Asp Asn Asn Val Ile Tyr Gln Val Asp Gly Ser Lys Ser Phe Asn
```

RAW SEQUENCE LISTING DATE: 08/30/2004
PATENT APPLICATION: US/10/828,985A TIME: 14:44:14

Input Set : A:\RS0210Y.txt

355			35					40					45			
358	Phe	Asp	Arg	Val	Phe	His	Gly	Asn	Glu	Thr	Thr	Lys	Asn	Val	Tyr	Glu
359		50	•				55					60			-	
362	Glu	Ile	Ala	Ala	Pro	Ile	Ile	Asp	Ser	Ala	Ile	Gln	Glv	Tvr	Asn	Gly
363						70		_			75			1		80
		Tle	Phe	Δla	Tyr	Glv	Gln	Thr	Δla	Ser	Glv	Lvs	Thr	Tyr	Thr	
367	1111	110	1110	1114	85	011	0111		1124	90	O <sub>T</sub>	-, 5		* J *	95	
	Mot	Clv	Cor	Clu		uic	Leu	Clv	Ual		Dro	λκα	71 h	т1д		λen
	Mec	СТУ	Ser		Asp	1112	пеп	GLY	105	110	110	Arg	AIa		1112	дад
371	71.	Dl. a	<i>α</i> 1	100	тіс	T	T ~	Dha		7	7 200	a1	Dho	110	T 011	7 200
	rre	Pne		гуѕ	ше	гуѕ	Lys		PIO	Asp	Arg	GIU		ьeu	цеu	Arg
375		_	115		~ 7		_	120	<b>~</b> 1	1	m 7	en1	125	-	_	
	Val		Tyr	Met	GIu	He	Tyr	Asn	GIu	Thr	iie		Asp	Leu	reu	Cys
379		130		_		_	135	_	<b>-</b>		_	140	_	>	_	_
	_	Thr	GIn	Lys	Met		Pro	Leu	lle	He		Glu	Asp	Val	Asn	
383						150					155			_		160
386	Asn	Val	Tyr	Val	Ala	Asp	Leu	Thr	Glu		Val	Val	Tyr	Thr	Ser	Glu
387					165					170					175	
390	Met	Ala	Leu	Lys	${\tt Trp}$	Ile	Thr	Lys	Gly	Glu	Lys	Ser	Arg	His	Tyr	Gly
391				180					185					190		
394	Glu	Thr	Lys	Met	Asn	Gln	Arg	Ser	Ser	Arg	Ser	His	${ t Thr}$	Ile	Phe	Arg
395			195					200					205			
398	Met	Ile	Leu	Glu	Ser	Arg	Glu	Lys	Gly	Glu	Pro	Ser	Asn	Cys	Glu	Gly
399		210					215					220				
402	Ser	Val	Lys	Val	Ser	His	Leu	Asn	Leu	Val	Asp	Leu	Ala	Gly	Ser	$\operatorname{Glu}$
403	225		-			230					235			_		240
406	Arq	Ala	Ala	Gln	Thr	Gly	Ala	Ala	Gly	Val	Arq	Leu	Lys	Glu	Gly	Cys
407	,				245	•			•	250			•		255	-
	Asn	Ile	Asn	Ara	Ser	Leu	Phe	Ile	Leu	Glv	Gln	Val	Ile	Lys	Lys	Leu
411				260					265	-				270	1	
	Ser	Asp	Glv	Gln	Val	Glv	Gly	Phe	Ile	Asn	Tvr	Arq	Asp	Ser	Lvs	Leu
415		<u>F</u>	275			1	1	280			2	J	285		1	
	Thr	Ara		Len	Gln	Asn	Ser		Glv	Glv	Asn	Ala		Thr	Ara	Ile
419		290					295		1	1		300	_1		- 5	_
	Tle		Thr	Tle	Thr	Pro	Val	Ser	Phe	Asn	Glu		Len	Thr	Ala	Len
	305	Cyb	1111	110		310	• • •	DCI	1110	1101	315		200			320
		Dha	λla	Sor	Thr		Lys	Tur	Mot	Lare		Thr	Pro	Tv/r	Wal	
428	GIII	FIIC	пια	Ser	325	лта	цуз	ı yı	ricc	330	LDII	1111	110	- y -	335	HBII
	Clu	1727	cor	Thr		Clu	Ala	T 011	Tou		λνα	Tur	λκα	Lare		Tla
	Giu	vai	per	340	Asp	GIU	Ата	neu		цуѕ	Arg	туг	Arg	350	ĢIU	116
432	Mak	7. ~~	T 0		T ***	<i>α</i> 1	T 011	C1	345	₩. 1	Com	T 011	C1.,		7. 200	777
	мет	Asp		ьуѕ	гаг	GIII	Leu		GIU	vaı	ser	ьеи		1111	Arg	Ald
436			355		_	_	~ 7	360		~ 3	_	_	365	<b>~</b> 1	_	_
	GIn		Met	GIu	гуз	Asp	Gln	ьeu	Ala	GIn	ьeu		Glu	GIU	ьуѕ	Asp
440	_	370		_	<b>_</b>	<b>.</b> -	375	<del>-</del>	_			380	_		_	
		Leu	GIn	Lys	Val		Asn	Glu	Lys	Ile		Asn	Leu	Thr	Arg	
	385					390					395				_	400
447	Leu	Val	Thr	Ser	Ser	Ser	Leu	Thr	Leu	Gln	Gln	Glu	Leu	Lys	Ala	Lys
448					405					410					415	
451	Arg	Lys	Arg	Arg	Val	Thr	Trp	Cys	Leu	Gly	Lys	Ile	Asn	Lys	Met	Lys
453				420					425					430		

VERIFICATION SUMMARY

DATE: 08/30/2004

PATENT APPLICATION: US/10/828,985A

TIME: 14:44:15

Input Set : A:\RS0210Y.txt -